REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion is respectfully requested.

Claims 26-82 are pending, with Claims 1-25 cancelled and Claims 26-82 added by the present amendment.

In the Official Action, Claims 1-9 and 11-19 were rejected under 35 U.S.C. § 102(e) as being anticipated by Kalman et al. (U.S. Patent No. 6,865,149, hereinafter Kalman); Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalman in view of "Optical Data Networking: Protocols, Technologies, and Architectures for Next Generation Optical Transport Networks and Optical Internetworks" to Rodriguez-Moral et al. (hereinafter Rodriguez-Moral); Claims 10 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalman in view of "A Fast Restoration System for ATM-Ring-Based LANs" by May et al. (hereinafter May); and Claims 22-25 were indicated as containing allowable subject matter.

Applicants acknowledge with appreciation the indication of allowable subject matter.

New Claims 26-82 correspond to cancelled Claims 1-25, albeit rewritten to more clearly describe and distinctly claim Applicants' invention. Support for these amendments is found in Applicants' originally filed specification.[1] The specification is amended to describe material shown in Figure 9. No new matter is added.

By way of background, Applicants' disclosed classifier circuit identifies which of the predetermined flows the packets belongs to. Each flow has a predetermined Reserved Rate (R) and Weight (W) and Type (CBR, VBR or CP). The packets are queued per flow and flow queues are served according to the methods described in Applicants' Application Serial Nos,

[1] Specification, Figure 9; page 12, lines 8-20; page 13, lines 10-20; page 16, line 11 – page 18, line 15.

09/608,489, 09/608,747 and 09/611,180, the entire contents of each having been incorporated by reference in Applicants' originally filed specification.[2]

Briefly recapitulating, new Claim 26 is directed to a node configured to connect to a first ring for transporting packets in a clockwise direction and to a second ring for transporting packets in a counter-clockwise direction. The first and second rings part of a metropolitan area packet network. The node includes a) one or more input modules connected to one or more source devices external to the first and second rings; and b) a network connection module connecting the input module to the first and second rings. Each of the one or more input module includes a1) one or more inputs, each configured to accept and relay one or more flows from the one or more source devices external to the first and second rings, a2) a classifier circuit connected to each of the one or more inputs and configured to assign a Flow ID to each packet relayed by the one or more inputs and to output one or more classified flows; a3) one or more first buffers connected to the classifier circuit configured to buffer at least one of the one or more classified flows and having a corresponding rate controller which varies an output from a respective first buffer on a per-flow basis, and a4) a second buffer connected to an output of each of the one or more first buffers and configured to perform rate shaping and queuing. The network connection module includes b1) one or more controllable switches corresponding to the one or more input modules. Each of the one or more controllable switches connects an output of a corresponding second buffer to the first and second ring. Each of the one or more controllable switches is controlled in response to a ring segment status so as to cause traffic, on a per-flow basis, to be queued in and/or directed from the respective second buffer onto the first ring. Claims 49, 67, 70 and 73 are directed to alternative embodiments of the invention recited in Claim 26. Claims 39, 58, 75, 78 and 81 are directed to a corresponding

[2] Specification, page 13, lines 1-20.

channel assignment embodiment. Applicants' claimed invention allows for improved network management control whereby, because the input to the network is controlled, no bits are dropped when a node/link fails or is degraded. Also, by controlling on a per-flow basis, quality of service can be tailored to specific needs without the loss of any bits.

Kalman describes a network having two rings wherein a first ring transmits data in a clockwise direction and the other ring transmits data in a counterclockwise direction. Traffic is removed from the ring by a destination node. The detection of a fault results in a broadcast signal to all nodes to reconfigure a routing table within the node so as to identify the optimum routing of source traffic to the destination node after the fault. Since the available links will now see more data traffic due to the failed link, traffic designated as unprotected traffic is given lower priority and may be dropped or delayed in favor of the protected traffic.[3]

Figure 6 of Kalman illustrates the pertinent functional blocks in each node. Each node is connected to adjacent nodes by ring interface cards 30 and 32. These ring interface rings convert the incoming optical signals on fiber optical cables 34 and 36 to electrical digital signals for application to switching card 38.

Figure 7 of Kalman illustrates one ring interface card 32 in more detail. Packet processor 48 interfaces with an external search machine 47 that contains routing information to route the data to its intended destination. Packet processor 48 provides the packet to a port of a switch fabric 50, which then routes the packet the appropriate port of the switch fabric 50 based on the packet header. Kalman goes on to note "Such switching fabrics and the routing techniques used to determine the path the packets need to take through switch fabrics are well known and need not be described in detail." Kalman provides an example in MMC Networks Model nP 5400 Packet Switch Module, whose data sheet was incorporated by reference.

[3] Kalman, Abstract.

These switches allegedly provide packet buffering, multicast and broadcast capability, four classes of priority service, and scheduling based on strict priority or weighted fare queuing.[4]

Ring interface card 32 also includes a serializer/deserializer 58, the output of which is applied to a tributary interface card, such as tributary interface card 52 shown in Figure 6. The tributary interface card may queue the data and route the data to a particular output port of the tributary interface card 52. Kalman goes on to note "Such routing and queuing by the tributary interface cards may be conventional and need not be described in detail."[5]

However, Kalman fails to disclose or suggest controllably assigning packets, on a per-flow basis and in response to a ring segment/channel status, to a first ring/channel for an initial entry of said packets onto the first and second rings/channels as recited in Applicants' independent claims. Kalman also fails to disclose or suggest controllably removing the packets from one of the first and second rings on a per-flow basis for delivery to a destination device as recited in Applicants' dependent claims. Kalman also fails to disclose or suggest controllably reassigning on a per-flow basis the packets previously assigned to the first ring to the second ring in response to a change in ring segment status as recited in Applicants' dependent claims. Applicants have considered the remaining applied references and submit these remaining references do not cure the deficiencies of Kalman.

MPEP §706.02(j) notes that to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Also, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found

[4] Kalman, Figures 6-8; column 12, lines 15-47.
[5] Kalman, column 12, line 63 – column 13, line 12.

in the prior art and not based on applicant's disclosure. *In re Vaeck,* 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Without addressing the first two prongs of the test of obviousness, Applicants submit that the Official Action does not present a *prima facie* case of obviousness because all of the applied references fail to disclose all the features of Applicants' claimed invention.

Accordingly, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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